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Application Date: April 12, 2000 Case No.: 89205898

Description Letter of New Patent

I. Name of New Invention: Multi-functional scooter

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IV. Abstract of Invention in Chinese
(Name of invention: multi-functional scooter)

A multi-functional scooter, especially the scooter used for play on a flat surface, is mainly a saddle-shaped body with front and rear wheels, and a paddle on the concave center. On the lower part of the front wheel section there is a space for assembly and installation of driver unit. On the lower part of the rear wheel section, a training wheel with inertia can be installed. The driver unit is vertical pointing upward and is connected to the handles through handle bar stem. Automatic movement can be achieved by using hands to operate the handles back and force to drive the driver unit. The handle bar stem can be pulled down or dismounted through the connecting axis. This allows the scooter to be multi-functional and is the purpose of this invention.

V. Description of Invention

Scooter, a sports equipment or a fun application, is a flat body with a turning wheel in the front and inertia wheel in the back. It allows the user to move with one foot on the paddle and another on the ground to push forward. In general application, the scooter can only be pushed passively and cannot move by itself. Therefore it lacks fun in many ways. In addition, the scooter is of a flat body. The diameter of the wheel is smaller. Therefore, it cannot cope well with the uneven surface. Therefore, the range of the game is limited to a flat location. Moreover, because of the flat body, when using the scooter, the orthocenter cannot come near the surface. Hence, it's hard to operate. This invention uses a saddle-shaped body The convex front wheel section and the lower space in the rear wheel section allows enough space for installation of a driver unit and real wheel. In addition, the driver unit is pointing upward and can be connected to the handle bar stem and handles through a connecting axis. Through the function of the connecting axis, it can be easily folded or dismounted. This invention is fun to use in many ways.

Another purpose of this invention is to install on the upper part of the rear wheel unit related rear wheel section, a paddle style brake. It directly works on the rear wheel. This allows easy brake during operation.

Another purpose of this invention is with the support of the supporting component for the rear wheel, a right and left rear wheels are installed on the two sides. This will allow an standing twist car operation.

For a detailed description of this invention, please refer to a schematic description as follows:

Diagram 1 is a 3-D picture of exterior of this invention.
Diagram 2 is an illustration of the brake device of this invention.
Diagram 3 is another practical illustration of this invention.

This multi-functional scooter, especially the scooter for gaming and exercise purpose, is mainly composed of one saddle-shaped body (as illustrated in Diagram 1). The center of the saddle-shaped body is concave and has a paddle for one foot (13). In the front convex area is the front wheel section (11). In the rear convex area is the rear wheel section (12). In the space on the lower part of the front wheel section a driver unit (3) is installed. A rear wheel (2) is installed on the lower part of the rear wheel section (12) with supporting component (14). The rear wheel (2) is a inertia wheel. The driver unit on (3) at the front is the same driver unit used by regular twist cart. Its primary components are a triangle component (31) and the driver wheels (32) on the two sides of the rear. The front end of the triangle component (31) is perpendicular pointing upward and passes through the front wheel section (11) of the body (1). On the top is a connection axle (41). The connecting axle (41) is connected to the handle bar stem (4) on its top. On top and perpendicular to the handle bar stem (4) is the handle (5). It allows the user to stand on the paddle (13) in a standing position. His hands can grasp the handle (5) and turn it left and right to twist. The driver unit (3) is started when the handle bar stem (4) and the connecting axle (41) are connected. The principle of the wiggling of the driver unit (3) to the left and right is the same as the structure of the twist cart. They both use the left and right driver wheels (32) to achieve the function of alternating circular slicing to generate forward movement and then cause the body (1) of the scooter to move forward. The rear wheel is of a single-wheel design. Therefore, the user must study how to operate it with equilibrium. The paddle (13) is of a low chassis design. Therefore, it allows the user an easy operation training and to exercise the muscle in the entire body. Meanwhile, basically the connecting axle (41) uses a open connection to give the handle bar stem a bendable or dismountable design. There are many types of open connection as in general machinery design. We will not expatiate on this topic herein.

After removing the handle bar stem (4), due to the open connection of the driver unit (3) on the lower part of the front wheel section (11) and the driver unit itself is in a free position and not restricted by the handle bar stem, it provides the same applicable conditions as the regular skatingboard. Moreover, on the upper part of the rear wheel

section (12), a brake device (6) can be installed. The brake device (6) (as illustrated in Diagram 2) is connected to a brake component (61) on the bottom. Moreover, one end of the brake component is installed on the rear wheel section with open connection (60). This open connection may adopt flexible restoration method. When the brake component is not stepped upon, it will be in a face to face position with the rear wheel (2). When the brake device is stepped upon, the brake component (61) will be in friction with the excircle of the rear wheel. A braking effect is achieved through that friction. Although the brake device is installed on the rear wheel, due to the short distance between the front and rear of the body, its operation is very convenient. In addition, the plagiogeotropism between the foot paddle and the real wheel section (12) can be used as a sensing position for the foot. When the foot is in touch with the plagiogeotropism, it shall feel the position of the brake device. And the real wheel is installed on the two sides. Using the axle hole (142) of the supporting component (141), after passing the longer axle bar (21) it will form left and right wheels on the two sides of the scooter body (as illustrated on Diagram 3). Using the design of the two real wheels, it can be played by beginners or young children. The handle bar stem (4) can be even adjusted to accommodate users of various heights. This is multi-functional.

Symbols of Components in the Diagrams:

Saddle-shaped body	1
Rear wheel	2
Driver unit	3
Handle bar stem	4
Handle	5
Brake device	6
Front wheel section	11
Rear wheel section	12
Foot paddle	13
Axle pole	21
Triangle component	31
Driver wheel	32
Connecting axle	41
Open connection	60
Brake component	61
Supporting component	141
Axle hole	142

VI. Scope of Patent Applied

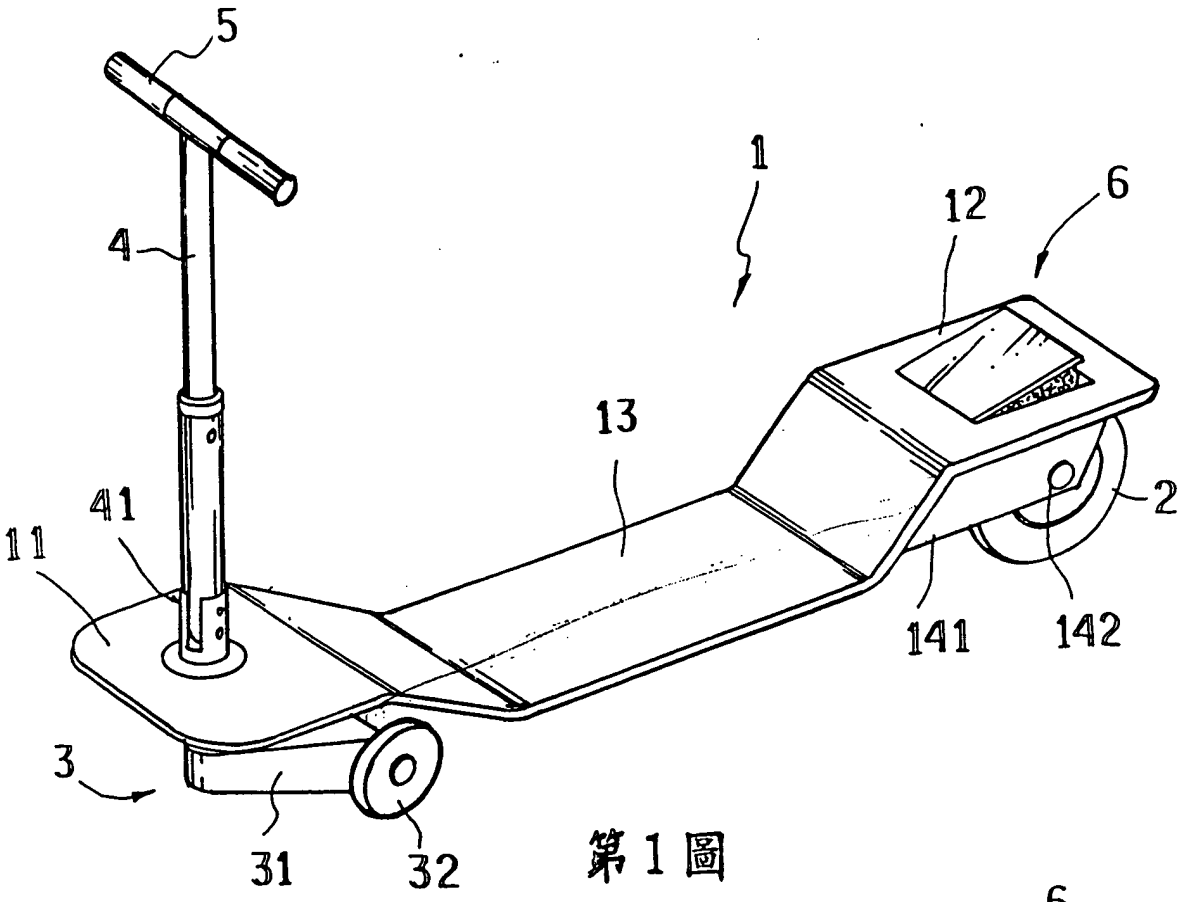
1. A multi-functional scooter, especially those for play in different conformation, is mainly composed of a saddle-shapped body. The center of the saddle-shaped body is concave and has a foot paddle. On the convex is the front wheel section and rear wheel section. On the lower part of the front wheel section has a driver unit. On the rear wheel section is the rear wheel with supporting component. The driver unit also has a triangle component. The triangle component is perpendicular pointing upward passing through

the front wheel section on the scooter body. On the top is a connecting axle. the connecting axle is connected to the handle bar stem on the top. The handle bar stem is perpendicular to the top and is connected to the handle.

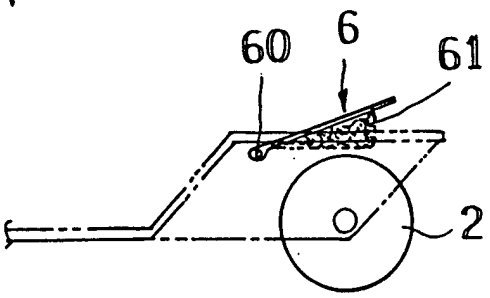
2. The top of the rear wheel section of the multi-functional scooter described in item 1 of the Scope of Patent Applied has a brake device. The brake device has a brake component connected to the bottom. The brake component is connected to the real wheel section at one end by open connection.

3. The handle bar stem of the multi-functional scooter described in item 1 of the Scope of Patent Applied can be dismounted and can be used as skatingboard.

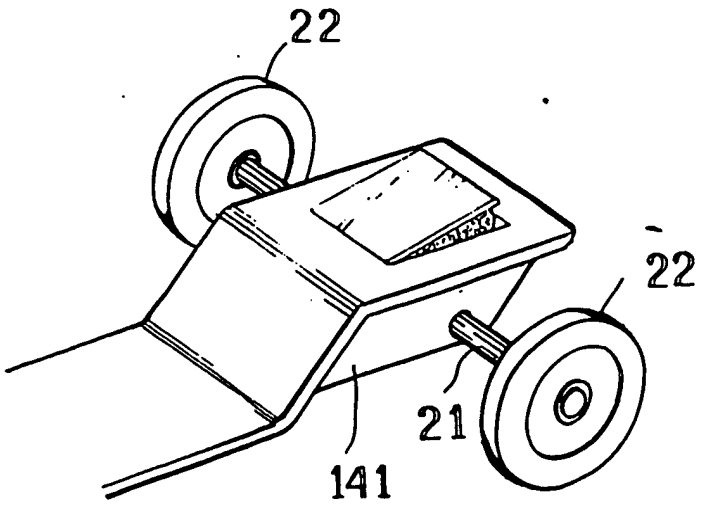
4. The real wheels of the multi-functional scooter described in item 1 of the Scope of Patent Applied can be installed on the left and right hand side.



第1圖



第2圖



第3圖

FILE：顧茂鈞 先生

多功能滑板車

89205898

(8) MULTI-FUNCTIONAL TWIST VEHICLE

THE PUSHER INTERNATIONAL CO., LTD.(TAIWNA)®
普及國際代理 ■福鄉通商■
彰化・台北・桃園・香港・深圳 E-mail :pusher@ms1.seeder.net.tw

Date : 89.4.12

申請日期： 89.4.12	案號： 89205898
類別：	

（以上各欄由本局填註）

新型專利說明書

一、新型名稱	中 文	多功能滑板車
	英 文	
二、創作人	姓 名（中文）	1. 顧洪鈞
	姓 名（英文）	1.
	國 籍	1. 中華民國
	住、居所	1. 台北市忠孝東路五段372巷27弄67號6樓
三、申請人	姓 名（名稱）（中文）	1. 顧洪鈞
	姓 名（名稱）（英文）	1.
	國 籍	1. 中華民國
	住、居所（事務所）	1. 台北市忠孝東路五段372巷27弄67號6樓
	代表人姓 名（中文）	1.
	代表人姓 名（英文）	1.

四、中文創作摘要　（創作之名稱：多功能滑板車）

一種多功能滑板車，尤指提供運用於平整地面玩耍操作之滑板車，其主要係由一鞍形車體，前後兩端各凸設有前轂部以及後轂部，中間凹設為一腳踩面，該前轂部下方形成有一組裝空間，以供裝設一驅動輪組，後轂部下方可裝設一惰性之後輪，該驅動輪組垂直朝上經由一轉向桿連結一把手，當利用手肢操作手把作左右反向操作，進而驅動該驅動輪組，達到自走的目的，以及該轉向桿可經由連結軸，而作收縮或卸下等多種方式運用，藉以達到該滑板車可形成多功能之運用者，為本創作主要目的。

英文創作摘要　（創作之名稱：）

五、創作說明（1）

有關運動器材或趣味性運用之滑板車，係由一扁平狀之車體，前後各設有轉向輪以及惰輪，以提供使用者以單腳踩上之後，藉由另一腳的推動而達到運行效果，該滑板車一般運用上僅能作被動性的推動，本身無法達到自走的形態，因此缺乏多層面的趣味性，又該滑板車係為扁平狀車體，輪體直徑較小，因此很難對付凹凸不平的地表，所以遊戲範圍被限制在需很平整特定的場所之內，又該車體為一扁平狀，因此使用時，重心無法接近地表，以至於難以操作遊戲，得是本創作特別利用鞍形車體，藉由該鞍形車體前後所凸起前轂部及後轂部對下空間，可足夠裝設驅動輪組及後輪，而且該驅動輪組往上，經由一聯結軸連結轉向桿及把手，藉由該連結軸的作用，可達到易於收置或是卸下，使本創作之滑板車可達到多面性趣味運用者。

本創作再一目的，為在該後輪組的上方，相關後轂部的位置設有腳踩式的煞車裝置，直接作用於後輪，達到簡易煞車的運用效果。

本創作又再一目的，為該後輪可藉由支持件的支持，而於其兩側設有左右後輪，而可形成立姿運用之立姿搖搖車者。

有關本創作之詳細說明，謹請參考圖式說明如下：

第１圖　係為本創作之立體外觀圖。

第２圖　係為本創作之煞車裝置示意圖。

第３圖　係為本創作之另一實施例之一。

本創作多功能滑板車，尤指提供遊戲運動用之滑板車

五、創作說明（2）

，其主要係由一鞍形車體１（如第１圖所示），該鞍形車體中間往下凹設有一腳踩面１３，朝前向上凸起設有一前轂部１１，後端凸起設有一後轂部１２，該前轂部下方空間裝設有一驅動輪組３，後轂部１２下方經由支持件１４１設有一後輪２，該後輪２為一惰性輪，又朝前驅動輪組３係為一般搖搖車所運用之驅動輪組，主要係有一三角件３１與及後端左右兩側設有驅動輪３２，又三角件３１前端垂直朝上，穿經車體１的前轂部１１之後，對上設有一連結軸４１，該連結軸４１對上連結有轉向桿４，該轉向桿４上端垂直設有連結有把手５，得是使用者可藉由其腳肢以立姿方式踩在腳踩面１３，而手肢可握持把手５之後作左右擺轉，經由轉向桿４以及連結軸４１的連結作用進而驅動該驅動輪組３，使該驅動輪組３同樣達到左右反向擺動的效果，又該驅動輪組３左右反向擺動效果係與一般搖搖車結構原理類似，相同藉由左右的驅動輪３２，達到交替弧切的作用，使產生行進的位移，進而連動車體１可達到前進的效果，該後輪為一單輪的設計，因此使用者必須揣摩該平衡的運用效果的操作方式，並藉由該腳踩面１３係為低底盤的設計，因此可提供使用者可簡易性達到操作的訓練，祈達到全身肌肉之鍛鍊，又該連結軸４１基礎上可藉由駁接的方式，或是其它活結的效果而達到可彎折或是可將轉向桿卸下的設計，有關該活結的結構設計可運用方式，為一般機械設計方式具有多種形態，於此請容不在贅述。

五、創作說明（3）

若將該轉向桿４取下之後，由於該驅動輪組３係活結於前轂部１１的下方，而且該驅動輪組本身不受轉向桿的限制而可為自由狀態，於是可提供為一般滑板車的使用狀況，另再該後轂部１２的上方，可設有一煞車裝置６，該煞車裝置６（請如第２圖所示），對下連設有一煞車件６１，而且再該煞車件一端經由活結６０的方式設於後轂部１２的部份，並且該活結可以以採彈性恢復之方式，以當該煞車件未被踩下時，可保持與後輪２成對開狀態，當踩下煞車裝置之後，該煞車件６１經被連動而對該後輪的外圓作摩擦，藉由該摩擦而達到煞車效果，該煞車裝置的運用，雖然係設於後輪的方式，但由於該車體前後距離並不長，因此操作使用上非常的利便，而且該腳踩面與後轂部１２的之間斜向部份可作為腳肢的感知位置，利用腳肢碰置該斜向面的時候，即會感知到煞車裝置的位置，又該後輪可設為左右兩側之後輪，係利用該支持件１４１所設軸孔１４２，經由較長的軸桿２１穿置之後於車體的左右兩側形成有左右後輪（如第３圖所示），藉由該二後輪之設計，可提供初學者或幼小兒童玩耍，甚至該轉向桿４可設為伸縮之樣態，提供不等身高之使用者玩耍，使達到多功能之應用形態者。

圖式元件符號：

鞍形車體．．．．．．．．．．．．．．．．．．．．１

後輪．．．．．．．．．．．．．．．．．．．．．．２

驅動輪組．．．．．．．．．．．．．．．．．．．．３

轉向桿 4
把手 5
煞車裝置 6
前轂部 11
後轂部 12
腳踩面 13
軸桿 21
三角件 31
驅動輪 32
連結軸 41
活結 60
煞車件 61
支持件 141
軸孔 142

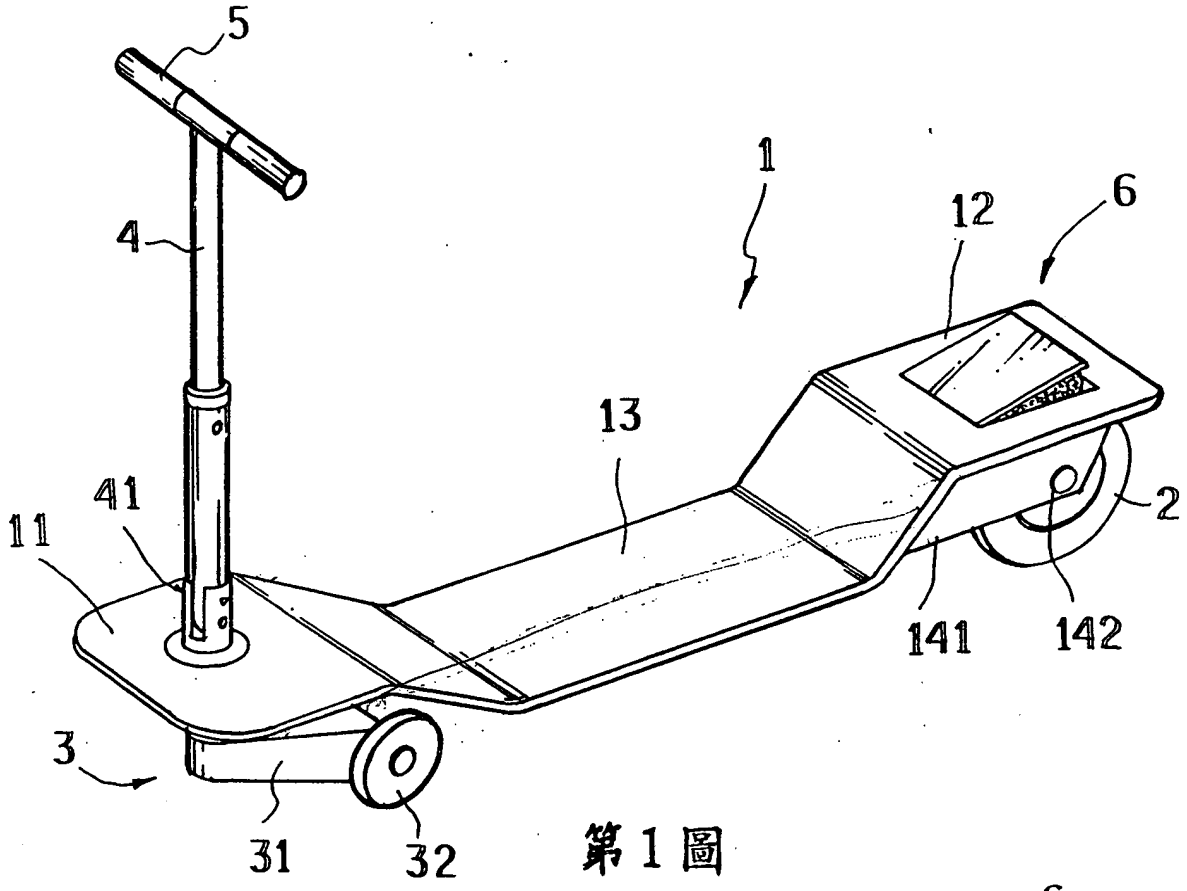
六、申請專利範圍

1．一種多功能滑板車，尤指提供遊玩用之多形態應用滑板車，主要係由一鞍形車體，該鞍形車體中間往下凹設有一腳踩面，朝前向上凸起設有一前轂部，後端凸起設有一後轂部，該前轂部下方空間裝設有一驅動輪組，後轂部下方經由支持件設有一後輪，又驅動輪組設有三角件，三角件垂直朝上穿經車體的前轂部，對上設有一連結軸，該連結軸對上連結有轉向桿，該轉向桿上端垂直設有連結有把手者為其主要特徵。

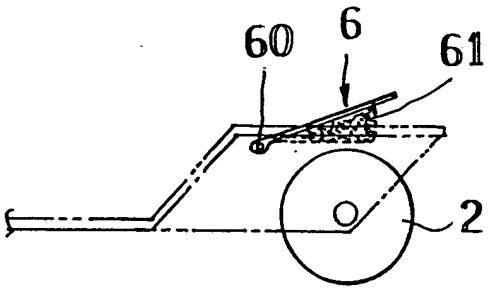
2．如申請專利範圍第1項所述之多功能滑板車，其中在該後轂部的上方，可設有一煞車裝置，該煞車裝置，對下連設有一煞車件，煞車件一端經由活結的方式設於後轂部的部份者。

3．如申請專利範圍第1項所述之多功能滑板車，其中該轉向桿係可卸下者。

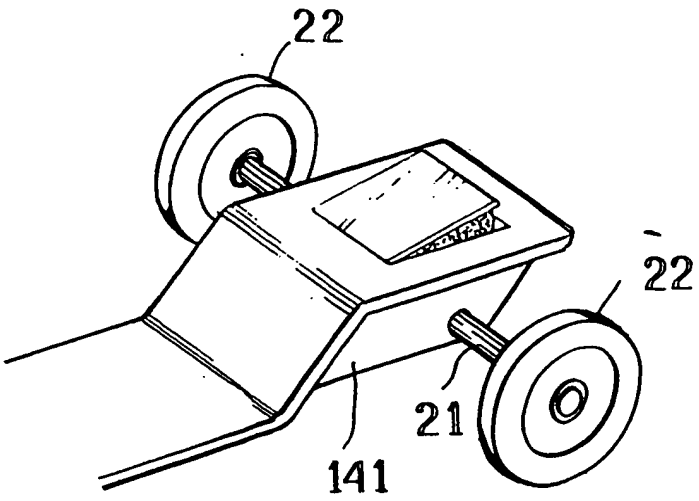
4．如申請專利範圍第1項所述之多功能滑板車，其中該後輪，可設為左右二輪之形態者。



第1圖



第2圖



第3圖